EXPERIMENTAL DESIGN FOR COMPLEX SYSTEMS

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ABSTRACT

5   A method for a systematic approach to forming experimental designs for large, complex systems after an idea for a product is formed. Critical variables for the product are determined by experts in the field, a design matrix U_k is defined, a base design matrix X is generated, $Y(P) = (I - B(B^TB)^{-1}B^T)[(X \, P)//U]A$ & Wynn's criterion is defined, where P is a permutation matrix, I is an identity matrix, B is a blocking matrix, B^T is a transposed
10   matrix of B and A is a matrix composed of causal map-based coefficients and wherein a design matrix U_k is created. The index $k \leftarrow k + 1$ is set and an algorithm to choose the best of random column permutation matrices P and an algorithm to choose the best column permutation matrix P that is near a previous solution and setting $U_k \leftarrow [XP^k$ with rows from U_{k-1} appended].

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